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08/474,388	06/07/1995	TIMOTHY A. SPRINGER	1011.004000D	2682

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EXAMINER
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GAMBEL, PHILLIP

ART UNIT	PAPER NUMBER
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1644

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

08/474,388

Applicant(s)

SPRINGER ET AL.

Examiner

Phillip Gambel

Art Unit

1644

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2002 and 09 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 71-73, 75-78, 80-82 and 99 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 71-73, 75-78, 80-82, 99 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's amendment, filed 9/9/05, has been entered.

Claims 71-73, 75-78, 80-82 and 99 are pending and being acted upon presently

Claims 1-70, 74, 79, 83-98 have been canceled previously.

2. The examiner appreciates applicant's effort to complete the scanned eDAN file application.

Applicant is invited to review the scanned file application to determine if, indeed, the scanned instant file application is complete.

The examiner apologizes for any inconvenience to applicant in this matter.

3. Upon a review of the scanned file application and upon an updated search, New Grounds of Rejection are set forth herein.

With respect to the rejections of record, applicant's arguments in the Brief on Appeal, filed 10/21/02, and the examiner's rebuttal in previous Office Actions are essentially the same of record.

4. For examination purposes, it appears that the priority date of the instant claims is the filing date of the priority application USSN 07/045,963, filed 5/4/87.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 71-73, 75-78, 80-82 and 99 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tomassini (PhD Dissertation, 1986 (of record) for the reasons of record.

Tomassini teaches the isolation and characterization of the human rhinovirus receptor, including various cell and membrane preparations (see entire document).

Applicant's arguments and the examiner's rebuttal are essentially the same of record.

For a more complete analysis, see applicant's Brief on Appeal, filed 9/9/05 and the previous Office Actions, mailed 12/5/00 and 9/21/01.

8. Claims 71-73, 75-78, 80-81 and 99 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tomassini et al. (J. Virol. 58: 290-295, 1986 (of record) for the reasons of record.

Tomassini teaches the isolation characterization of the human rhinovirus receptor, including cellular and membrane preparations (see entire document).

Applicant's arguments and the examiner's rebuttal are essentially the same of record.

For a more complete analysis, see applicant's Brief on Appeal, filed 9/9/05 and the previous Office Actions, mailed 12/5/00 and 9/21/01.

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9. Claims 71-73, 75-78, 80-81 and 99 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Colonno et al. (Virus Attachment and Entry into Cells, Proceedings of an ASM Conference held in Philadelphia, PA, April 10-13, 1985) (of record).

Colonno et al. teach the characterization of the cellular receptor specific for attachment of most human rhinovirus serotypes, including cellular and membrane preparations (see entire document, including pages 112-115).

Applicant is reminded that no more of the reference is required than that it sets forth the substance of the invention. The claimed functional limitations would be inherent properties of the referenced rhinovirus receptor.

The products of the instant claims and the prior art are defined in terms of physical characteristics. Comparison of the instant products with prior art is difficult since the Office is not equipped to manufacture the claimed product and/or prior art products that appear to be related and conduct comparisons. Also, it is noted that differences or variations were known in the art at the time the invention was made when protein molecular weight was determined by different methods and conditions.

The burden is on the applicant to establish a patentable distinction between the claimed and referenced products. See In re Best, 195 USPQ 430, 433 (CCPA 1977); In re Marosi, 218 USPQ 289, 292-293 (Fed. Cir. 1983); In re Fitzgerald et al., 205 USPQ 594 (CCPA 1980).

Applicant's arguments and the examiner's rebuttal are essentially the same of record.

For a more complete analysis, see applicant's Brief on Appeal, filed 9/9/05 and the previous Office Actions, mailed 12/5/00 and 9/21/01.

10. New Grounds of Rejection. An Old Ground of Rejection Reinstated.

Claims 71-73, 75-78, 80-81 and 99 are rejected under 35 U.S.C. § 102(a) as being anticipated by Dustin et al. (J. Immunol. 137 : 245-254, 1986) (1449 ; #AS5) (see entire document).

Dustin et al. teach isolation and expression of ICAM-1, including the various molecular weight sizes and its role in adhesion which appears to be the same or nearly the same as the instant claims (see entire document, including the Abstract, Results and Discussion).

Upon a review of the instant application, it appears that the 1.132 Declaration has been provided to obviate the prior art rejection based upon this Dustin et al. (J. Immunol. 137 : 245-254, 1986) (1449 ; #AS5).

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However, the Declarations Under 37 CFR 1.1.132 are ambiguous in that state, in part, the following:

"We are the sole inventors of the invention described and claimed in U.S. Serial No. 07/515,478, filed April 27, 1990 ... ."

The ambiguity lies in that the 132 Declarations refer to another USSN (i.e. USSN 07/515,478), which issued into U.S. Patent NO. 5,284,931.

The claims of U.S. Patent No. 5,284,931 are drawn to compositions comprising anti-ICAM-1 antibodies and methods of decreasing severity of inflammation by administering said anti-ICAM-1 antibodies.

However, the instant invention is drawn to ICAM-1 itself or compositions comprising ICAM-1 and not anti-ICAM-1 antibodies and methods of using said anti-ICAM-1 antibodies.

Given the differences between the authorship and the inventorship, including that the inventor Marlin is not listed as an author on Dustin et al. (J. Immunol. 137: 245-254, 1986).

Also, upon a review of the instant prosecution. ICAM-1 and anti-ICAM-1 were subject to restriction, whereupon applicant elected ICAM-1 without traverse (see Applicant's Amendment, filed 10/15/97).

Therefore, given the differences in USSNs between the 132 Declarations and the instant USSN, the differences between the claimed inventions between the 132 Declarations and the instant invention and the ambiguity between the authorship and inventorship in both directions,

the record should be clear in the instant application about the instant claims drawn to ICAM-1 itself and not anti-ICAM-1 antibodies, the subject of the 132 Declarations and the claims of another USSN that were restricted without traverse.

The examiner apologizes for any inconvenience in this matter.

11. Claims 71-73, 75-78, 80-81 and 99 are rejected under 35 U.S.C. § 102(a)(b) as being anticipated by Clark et al. ((Human Immunology 16: 100-113, 1986) as evidenced by Dustin et al. (Immunol. Today 9: 213-215, 1998).

Clark teach that in a recent international workshop, a group of B cell markers were well characterized and given a WHO-based international nomenclature, including polypeptides of different molecular weights (e.g. see entire document, including the Introduction on pages 100-101).

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Co-inventors co-authored publication by Dustin et al. acknowledged that ICAM-1 was identified independently as a B cell activation marker, which is a single chain glycoprotein of 76-114 kDa expressed on different cells citing by Clark et al. ((Human Immunology 16: 100-113, 1986). See the citation to Reference 8 on page 213, left column, paragraph 2.

Although the Clark et al. reference does not disclose that one of the referenced B cell markers is now known as ICAM-1, Dustin et al. does so acknowledge that the B cell markers describe by Clark et al. were identified and well characterized at the time the invention was made. Given that Dustin et al., including certain co-inventors, acknowledged that ICAM-1 was identified independently at the time the invention was made. Also, the claimed functional limitations would be inherent properties of the referenced well-characterized B cell markers at the time the invention was made. CD147--specific antibodies. Applicant is reminded that no more of the reference is required than that it sets forth the substance of the invention. Also, the Courts have held that there is no requirement that those of ordinary skill in the art know of the inherent property. See MPEP 2131.01(d) and MPEP 2112 - 2113 for case law on inherency.

Given the ambiguity about the public availability of this reference, the rejection is made under both 35 U.S.C. § 102(a)(b).

Efforts are being made to determine the public availability date of this reference.

12. Claims 71-73, 75-78, 80-82 and 99 are rejected under 35 U.S.C. § 103(a) as being unpatentable over

Tomassini (PhD Dissertation, 1986) (of record) AND/OR

Tomassini et al. (J. Virol. 58: 290-295, 1986) (of record) AND/OR

Colonno et al. (Virus Attachment and Entry into Cells, Proceedings of an ASM Conference held in Philadelphia, PA, April 10-13, 1985) AND/OR

Newly added Dustin et al. (J. Immunol. 137 : 245-254, 1986) (1449 ; #AS5) (see entire document) AND/OR

Clark et al. ((Human Immunology 16: 100-113, 1986) as evidenced by Dustin et al. (Immunol. Today 9: 213-215, 1998)

in view of the art known methods of isolating and preparing functional proteins of interest as well as the well known use of artificial membranes for a variety of uses in protein chemistry at the time the invention was made and to isolate and produce functional active proteins, as evidenced by Williams in Weir et al. (Eds.) Handbook of Experimental Immunology, Volume 1: Immunochemistry Fourth Edition, Blackwell Scientific Publications, Oxford 1986; pages 22.1- 22.4) and Pierschbacher (U.S. Patent No. 4,789,734).

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Tomassini (PhD Dissertation, 1986), Tomassini et al. (J. Virol., 1986) and Colonno et al. (Virus Attachment and Entry into Cells) as well as newly added Dustin et al. and Clark et al. are all taught above.

In response to applicant's assertions concerning the functional properties of the prior art ICMA-1 preparations and the well known use of artificial lipid membranes, the following references have been provided.

In response to applicant's comments about other techniques to isolate proteins of interest available to the ordinary artisan at the time the invention was made; Williams et al. disclose the art known purification of glycoproteins antigens by affinity chromatography at the time the invention was made (in Weir et al. (Eds.) Handbook of Experimental Immunology, Volume 1: Immunochemistry Fourth Edition, Blackwell Scientific Publications, Oxford 1986; pages 22.1- 22.4).

In addition to teach isolating cell surface receptors of interest including generally to field of cell biology as well as to cell adhesion systems (e.g. see Background of the Invention),

Pierschbacher teaches methods of isolating cell surface receptors, the protection of their functional integrity and their incorporation into liposomes and use (E.g. see Detailed description of the Invention, including Examples) (see entire document).

Applicant statements that it is generally known in the art that activity of an isolated and purified protein depends primarily on the purification procedure use, the claimed functional limitation cannot be inherent properties of the reference rhinovirus receptor.

While it is acknowledged that isolation and purification of an active form of a membrane-associated protein is dependent on the purification procedure used;

it was certainly within the purview of the ordinary artisan to isolate and purify functional forms of a known at the time the invention was made, given the arsenal of isolation and purification methods known and practiced at the time the invention was made.

The use of detergents and other reagents suitable for chemical or biochemical characterization of a protein of interest did not proven the ordinary artisan to isolate the same protein and maintain its function by alternative methods.

Here, too, the prior art does teach the isolation and characterization of the HRV receptor, its structural and functional properties, including its binding properties as well as antibodies thereto, wherein said antibodies bind the HRV receptor and block function.

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Also, as indicated previously, providing proteins of interest in artificial lipid membranes in a variety of means for a variety of purposes for the characterization and determination of the structure-function of a protein of interest was well known and practiced at the time the invention was made.

Also, it is noted that "artificial lipid membranes" has broad meaning; given the prosecution of the instant application and applicant's assertion that is irrelevant whether HRRP or ICAM-1 when associated with detergents meets the claimed limitation of artificial lipid membranes (see applicant's amendment filed 2/4/00; Paper No. 20; page 6).

It is noted the prior art teaches the isolation and characterization of the rhinovirus receptor which reads on the claimed ICAM-1 preparations.

Given applicant's arguments that the prior art isolated prior art rhinovirus receptor may not have the properties of binding LFA-1/Mac-1/p150,95; it is noted that prior art rhinovirus receptor is clearly identified as being the receptor for rhinovirus receptor.

Given this clear teaching and the clear motivation of the ordinary artisan to characterize this protein further, as taught by the each reference; the ordinary artisan would have been able to isolate and characterize the HRV receptor with the known and desired functional properties, such as HRV binding.

The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See MPEP 2144.

Although the prior art may not know that the HRV receptor also had the ability to bind to LFA-1/Mac-1/p150,95; these adhesion molecule properties would have been expected properties given the isolation of a functional HRV receptor with ability to bind HRV.

Alternatively, isolation of a functional B cell marker as taught by newly added Clark et al. would have been similarly obvious to the ordinary artisan to isolate and characterize functional proteins of interest as generally recognize and practiced in cell biology and immunology at the time the invention was made.

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One of ordinary skill in the art at the time the invention was made would have been motivated to isolate and characterize the structure-function nature of the HRV receptors or ICAM-1 or B cell markers as taught by the primary references, including the art known methods of isolating proteins of interest as well as the art known use of artificial lipid membranes;

given their clear importance in rhinovirus attachment and infection, adhesion or B cells and efforts to isolate and characterize the antigens in terms of rhinovirus infection or of immunological cells of interest as taught by the prior art at the time the invention was made.

From the teachings of the references, it was apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

13. The following is reiterated, in part, from the previous Office Action for applicant's convenience.

Applicant's arguments and the examiner's rebuttal are essentially the same as of record..

Applicant's arguments in conjunction with the Rothlein Declaration under 37 CFR 1.132, have been fully considered but not found convincing.

Applicant has argued in conjunction with the Rothlein Declaration that the Tomassini purified HRRP is not able to bind HRV (e.g. see page 46 of the Tomassini PhD Thesis).

Applicant has argued in conjunction with In re Donohue, MPEP 2131, and Current Protocols in Protein Science as well as with the Rothlein Declaration under 37 CFR 1.132, 10/12/00 (Paper No. filed 6/15/01 (Paper No. 29)), that each and every element of the claims must be found in the cited references.

It is noted that any disruption in structure from the purification procedure leading to the elimination of HRV binding would also reduce or eliminate LFA-1 binding.

Applicant has asserted that the Tommassini thesis and article teach the isolation and characterization of an inactive form of ICAM-1, which is incapable of binding to HRV, LFA-1, Mac-1 and p150,95.

Applicant submitted that Colonna et al. show a predominant protein band migrating with an apparent molecular weight of 90,000, however further analysis of this candidate receptor protein is in progress as well as mentioning the Tomassini article.

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In contrast, applicant has asserted that applicant's purification procedure taught in the specification enables the isolation of a functional HRRP receptor (ICAM-1), capable of binding to HRV, LFA-1, Mac-1 and p150,95.

Applicant stated that it is generally known in the art that activity of an isolated and purified protein depends primarily on the purification procedure used, the claimed functional limitation cannot be inherent properties of the reference rhinovirus receptor.

While it has been acknowledged that isolation and purification of an active form of a membrane-associated protein is dependent on the purification procedure used; it was certainly within the purview of the ordinary artisan to isolate and purify functional forms of a known at the time the invention was made, given the arsenal of isolation and purification methods known and practiced at the time the invention was made. The use of detergents and other reagents suitable for chemical or biochemical characterization of a protein of interest did not prove that the ordinary artisan was unable to isolate the same protein and maintain its function by alternative methods. Here, too, the prior art does teach the isolation and characterization of the HRV receptor, its structural and functional properties, including its binding properties as well as antibodies thereto, wherein said antibodies bind the HRV receptor and block function.

In response to applicant's comments about other techniques to isolate proteins of interest available to the ordinary artisan at the time the invention was made; Williams et al. disclose the art known purification of glycoproteins antigens by affinity chromatography at the time the invention was made (in Weir et al. (Eds.) Handbook of Experimental Immunology, Volume 1: Immunochemistry Fourth Edition, Blackwell Scientific Publications, Oxford 1986; pages 22.1- 22.4), for example in the New Grounds of Rejection set forth herein.

In contrast to applicant's assertions, the following of record is reiterated for applicant's convenience

Again, it is noted that in characterizing the HRV receptor, Tomassini et al. teach the isolation of the cellular receptors can be achieved by several methods, including but not limited to detergent treatment (page 113). Tomassini et al. clearly teach that the vast number of HRV serotypes use this HRV receptor for attachment, as determined by competition and functional assays (page 113).

While the thesis indicates that repeated attempts to use radiolabeled HRV in place of receptor antibody in the RIA gave inconclusive results owing to poor virus binding; it is not clear the conditions of the assay or the functional attributes of the radiolabeled receptor, since the data or details are not provided (page 44, paragraph 1).

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However, immunoaffinity purification did further purify the HRV receptor, wherein said HRV receptor was bound by specific antibody, wherein said anti-HRV antibody could block HRV attachment and that the HRV receptor could be used as an immunogen to generate antisera which selectively inhibit HRV attachment to susceptible cells tested by both membrane binding and cell protection assays (pages 50- 69).

Therefore, the thesis clearly states that the HRV receptor is utilized by the major groups of HRVs during attachment to cells (page 65, and Discussion on pages 107-118). Additional biochemical studies (pages 69-83) as well as initial cloning of the HRV receptor (pages 83-105) are also disclosed.

Further, applicant has failed to rebut prima facie showing of inherency or obviousness absent objective evidence such as side-by-side testing that would address the ability of the prior art HRV receptors ability to bind LFA-1/Mac-1/p150,95. See Ex parte Raske, 28 USPQ2d 1304 (BPAI 1993).

Even if there is an indication that there may be reduced binding of a particular radiolabeled HRV receptor preparation reduced binding to HRV; it maintained the ability to bind.

It is clear that the Tomassini thesis as well as the other references clearly teach that the HRV receptor is indeed the receptor for rhinovirus, that the HRV receptor is bound by antibodies that block HRV attachment or binding, and that the HRV receptor can be used as an immunogen to produce an antibody that blocks HRV attachment and binding.

Either it was inherent or expected at the time the invention was made that the HRV receptor identified and characterized by the references had the ability to bind virus and, in turn, would have either the inherent or expected properties of binding LFA-1/Mac-1/p150,95.

Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112-2113, including 2112.01.

Also, see Mehl/Biophile International Corp. V. Milgram, 52 USPQ2d 1303 (Fed. Cir. 1999); Atlas Powder Co. V. IRECO, 51 USPQ2d 1943 (Fed. Cir. 1999).

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For example, Atlas Powder Co. V. IRECO, 51 USPQ2d 1943 (Fed. Cir. 1999) states: "Artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art... However, the discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer. " The Court further held that "this same reasoning holds true when it is not a property but an ingredient which is inherently contained in the prior art".

The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See MPEP 2144.

While the LFA-1/Mac-1/p150,95 binding of the HRV receptor was not disclosed; the prior art need not disclose a newly discovered property in order for a prima facie case of obviousness. If the claimed and the structurally similar prior art species share a useful property, this will generally be sufficient to motivate an ordinary artisan to make the claimed species. See MPEP 2144.06 , including MPEP 2144.06 4(d).

Therefore, the prior art did not need to rely upon the binding of LFA-1/Mac-1/p150,95, as currently claimed. Clearly, the prior art teaching of the HRV receptor would have either the inherent or expected properties of binding LFA-1/Mac-1/p150,95; given its ability to bind HRV.

With respect to the recitation of "artificial" does not appear; the patentability of a product does not depend on its method of production. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113.

Applicant's arguments are not found persuasive.

14. No claim is allowed.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Gambel whose telephone number is (571) 272-0844. The examiner can normally be reached Monday through Thursday from 7:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phillip Gambel, Ph.D., J.D.  
Primary Examiner  
Technology Center 1600  
May 30, 2006



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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600